SPECIAL AIRWORTHINESS INFORMATION BULLETIN

Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation

Federal Aviation Administration

SW-06-15
December 16, 2005

http://www.faa.gov/aircraft/safety/alerts/SAIB

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin alerts you, owners and operators of **Sikorsky Aircraft Corporation (SAC), Model S-76 series rotorcraft,** of a possible excessive hydraulic servo leakage situation in the **main rotor servos**.

Background

Sikorsky and the FAA are assisting, the National Transportation Safety Board (NTSB) in the investigation of an S-76 accident. During the ongoing investigation, we have observed some anomalies regarding fluid contamination, excessive servo leakage, and flaking plasma coating within the main rotor hydraulic servos. As a result, Sikorsky and the servo manufacturer are conducting tests to evaluate the effects of flaking plasma, fluid contamination and internal leakage on main rotor servo performance. These tests are to determine if the anomalies found during the investigation pose a significant safety risk or if they contributed to the accident.

Sikorsky has issued an All Operators Letter (AOL) CCS-76-AOL-05-21 (attached), requesting all operators that have conducted the leak check in accordance with Chapter 5-10-00 of the S-76 maintenance manual on main rotor servos, provide this information to Sikorsky. Sikorsky also requests that you send any 76650-09805 servos that exceed the published leak rate to the HR Textron for examination and repair.

Recommendation

To assist Sikorsky in their evaluation and to further assist the NTSB in the investigation and collection of data we also strongly recommend that you:

- Complete the questionnaire in AOL CCS-76-AOL-05-21.
- Perform the leakage test requirements specified in Chapter 5 for part number 76650-09805 servos if the aircraft becomes available due to other maintenance requirements.
- (Pending the results of testing) comply with the recommended inspection specified in Chapter 5 for part number 76650-09805 servos.
- Perform a leakage check on any part number 76650-09805 servo that has more than 2250 hours if the leak test wasn't performed at 2250 hours.
- Send the leakage test results to Sikorsky as soon as possible.
- Send any 76650-09805 servo that exceeds the published leakage rate to the HR Textron for examination and repair.

For Further Information Contact

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December 13, 2005 CCS-76-AOL-05-0021

To: All S-76 Operators
All S-76 Centers
All Field Service Representatives

Attention: Aviation Director
Chief of Maintenance
Chief Helicopter Pilot

Subject: Main Rotor Servo Leak Check

Sikorsky continues working with investigation authorities into the S-76C+ accident in Estonia on August 10, 2005. The cause has not yet been established. Current investigative activities include running simulations, examining components and aircraft maintenance records and environmental factors.

As noted in CCS-76-AOL-05-0019 issued on November 18, 2005, the National Transportation Safety Board (NTSB) submitted a recommendation to the Federal Aviation Administration (FAA) that operators perform an internal leakage test of all S-76 main rotor servos. The FAA has not issued an Airworthiness Directive requiring fleet action. Sikorsky Aircraft and the main rotor servo manufacturer continue to evaluate the affects of internal leakage and flaking plasma coating on the operation of the servo. Testing that has been conducted to date by Sikorsky and the servo manufacturer has not identified any safety of flight issues. We are developing a more comprehensive test program, which will evaluate servo performance, that will begin in a few weeks. The NTSB, FAA and the servo manufacturer are all participating in this testing.

Chapter 5-10-00 of the S-76 maintenance manual recommends a leakage test be performed at 2250 hours on part number 76650-09805 series servos in accordance with section 67-15-00, paragraph 2. There is no recommended leakage test specified for part number 76650-09807-101 or 782500-1 servos. The published leakage test recommendations for 76650-09805 series servos is being reviewed to determine its applicability to part number 76650-09807-101 or 782500-1 servos.

This evaluation of current inspection recommendations and the planned testing will assist in the accident investigation as well as assure that the most appropriate maintenance procedures are specified. In order to assist the investigation, we are

requesting information from operators on their experience with the main rotor servo leakage test. All operators are encouraged to complete the attached questionnaire, particularly any who have performed the leakage test. Should any operator perform a leakage test and find that the servo exceeds the permissible leak rate, please report the instance to your Sikorsky Field Service Representative.

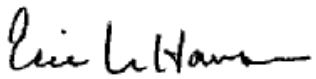
Part number 76650-09805 series servos that exceed the published leakage rate should be sent to the following address for examination and repair:

HRTextron
Attention: Frank Thompson
25200 West Rye Canyon Road
Santa Clarita, CA 91355-1265

Your cooperation in providing this information is appreciated. Sikorsky Aircraft will continue its cooperation with the NTSB and FAA and will provide you with periodic updates on the status of the investigation.

Very truly yours,

SIKORSKY AIRCRAFT CORPORATION



Eric Hansen
S-76 Program Manager

S-76 MAIN ROTOR SERVO QUESTIONAIRE

Operator: _____

How many S-76 aircraft in your fleet? _____

How many times per year do you estimate you perform the main rotor servo leak test recommended in Chapter 5-10-00? _____

Do you perform the leak check on:

Part number 76650-09805 series servos?	Yes ☐	No ☐
Part number 76650-09807-101 servos?	Yes ☐	No ☐
Part number 782500-1 servos?	Yes ☐	No ☐

If you perform the leakage test, have you ever had any that exceed the allowable leak rate? Yes ☐ No ☐

If yes, approximately when was the leakage test performed? _____

FOR SERVOS INSPECTED THAT EXCEED THE ALLOWABLE LEAK RATE

Aircraft Serial Number: _____ Aircraft Total Time: _____

Servo Part Number: _____ Servo Serial Number: _____

Servo Time Since New: _____ Servo Time Since Overhaul: _____

Date Of Last Overhaul: _____ Total Number of Overhauls: _____

Overhaul Facility That Performed Last Overhaul: _____

Servo Position: Forward ☐ Aft ☐ Lateral ☐

Stage 1 Leakage Rate: _____

Stage 2 Leakage Rate: _____

Prior to the leak check, were there any flight control problems noted? Yes ☐ No ☐

If yes, describe problem:

FAX completed questionnaire to (860) 998-6886

or EMAIL to: products@sikorsky.com